ABSTRACT OF THE DISCLOSURE

There is provided a compound semiconductor device that comprises a substrate formed of a first compound semiconductor, a graded channel layer formed on the substrate and formed of a second compound semiconductor layer, that lowers mostly an energy band gap in its inside by continuously changing a mixed-crystal ratio in a thickness direction such that a peak of the mixed-crystal ratio of one constituent element is positioned in its inside, and containing an impurity, a barrier layer formed on the graded channel layer, a gate electrode formed on the barrier layer, and source/drain electrodes for flowing a current into the graded channel layer. Accordingly, the compound semiconductor device having MESFET, that has the maximum mutual conductance and can make the change in the mutual conductance gentle in response to the gate voltage, can be obtained.